

AMERICAN FRUIT GROWER

AUGUST, 1921

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Edited by Samuel Adams

Montgomery Ward & Co.

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What We Have Learned About Tractors

By J. Frank Treat, Jr., California

PERHAPS the title I have chosen for what I shall write on the subject of tractors for orchard work may be misleading. If it suggests that our experience in mechanical power is so broad and varied and so inclusive of successes and failures with various types and makes of equipment that we can with final authority recommend any particular methods or machines, my readers must be disappointed. Through good luck, or possibly as the result of good judgment, we have little in the way of unfortunate experience with mechanical equipment to tell about. Our three tractors are of only two makes and all three are of the track-laying type, also of comparatively large size for orchard work. Because of this I write from a rather limited experience that does not include any use of other types of machines or of the smaller power units which would, of course, answer all the requirements of orchards smaller than ours. There may, however, be some things in our experience that will be of interest and possibly of helpfulness to other orchardists.

Our orchard at Linden, California, is probably classed as a rather large one. It comprises 336 acres, planted almost entirely to peaches, pears and plums. Our mechanical power equipment consists of one 45-horsepower "caterpillar" tractor that we have had for three seasons, one of the same make that we have had for two seasons and a 35-horsepower ball-tread tractor that is three or four years old. This may seem a rather imposing array of tractive power, even for so large an orchard as ours, but it is our judgment that skimping on power is poor economy. In the first place, the possession of ample power equipment makes us fairly independent of weather conditions. When the working season is short, we can feel the assurance that our work can be finished up properly and in proper time, because we have plenty of power for the purpose. In the second place, the possession of liberal power enables us to do our work the way the best orchard practice recommends that it should be done. If we were cramped on power we would have to be figuring constantly how we could get over all the ground and presently we would be plowing an inch or two shallower than we ought, or neglecting some of the cultivation.

High-Powered Tractor Units Favored

These same points explain why we adopted such high-powered units. Our two 45-horsepower tractors each have the power of 26 average farm horses at the drawbar, and the other tractor can pull about as much as 15 horses. That totals up a drawbar horsepower equal to that of 67 horses, but it doesn't mean that we are doing that much work with the tractors or have any continuous need for that great amount of power. When we set out to choose a tractor, we found that one tractor with twice as much power as another one of the same quality, didn't cost anywhere near twice as much to

purchase or to maintain and operate. So we picked the most powerful tractor we could find that was still compact enough, small enough and sufficiently easy-handling so that it could operate successfully in our orchard.



J. Frank Treat, Jr.

Either of our larger tractors can pull a two standard subsoiler to a depth of 24 inches, plow as deep as we want to go and in cultivating can pull a twelve-foot double-disk harrow with 20-inch disks, avoiding the necessity of working close to the trees and the danger of injuring them. We never have to overload our tractors—most of

the time they are not pulling anywhere near a full load, but I believe this policy very materially lengthens the life of our machines and lessens our up-keep expense. It is our observation that overloading is one of the most costly and harmful practices that a tractor owner can indulge in, and I believe it is responsible for many of the so-called tractor failures and for a large share of the grief caused owners who are constantly complaining of tractor breakdowns and excessive up-keep cost.

Possessing, as we do, liberal tractive power, we do not hesitate to undertake any kind of power job, nor are we obliged or tempted to "skimp" our work. This, for instance, is our cycle of orchard cultivation:

The Orchard Cultivation Operations

As early in the spring as is practicable, which is generally along about the 15th of March, and not later than the first of April, we plow our orchard, following up the plowing with cultivation the next day, cultivating in the same direction as the plowing. Then we follow this with two diagonal cultivations, two cultivations at right angle to the plowing and one more in the direction of the plowing. To make this more specific, let us say that we plow from east to west. The first cultivation following the plowing is also from east to west, and is done with a disk harrow. Then we cultivate with the disk harrow diagonally, northeast to southwest and northwest to southeast. Then we cultivate at right angle to the plowing, or north and south. In the final operation, we use a 13-foot drag of 6x8 timber, and a set of harrows, behind the disk. When these operations have been completed, the ground in our orchard is as smooth as a dance floor, free from any humps or ridges, free from lumps or clods, the surface consisting of a fine, powdery

mulch that preserves perfectly the moisture stored in the ground by the winter rains.

For later moisture, we have to depend, of course, upon irrigation. In the valley sections of California, there is, after the end of April or the middle of May, and frequently from as early a date as the end of March, rarely a drop of rain for from four to six months. Dry-farming or irrigation, or a combination of the two, is therefore necessary throughout the interior section of the state. We irrigate our orchards twice—the first time about the first of June and the second time about the middle of July—obtaining our water from two deep wells. The topography of our land is such that it is not feasible to use the furrow system of irrigation. We employ the ridging method, by which each tree is enclosed in a separate square, the ridge walls of which retain the water when the square is flooded. We give our orchards two diagonal diskings—one in each direction—after each irrigation, to break down the ridges and restore the smooth mulch. In the fall, we disk the ground again for planting our cover crop of *Melilotus indica*.

We depend chiefly upon this plan of soil management for keeping our orchard in best condition and bearing. To a very limited extent we have experimented in some sections of our orchard with beet lime fertilizer and it appeared that the use of this fertilizer was of some benefit to the trees, causing the leaves to stay on later and apparently producing a better bud growth in the spring. We depend, however, almost entirely upon thorough cultivation, irrigation and cover crops to maintain productivity.

I have gone rather extensively into detail concerning the cultivation of our orchards, in order that I may give my readers some idea of the amount of our tractive work and what we expect and demand of our tractors. It can be seen that there is plenty of work for them to do.

The Orchard Power Equipment

Our equipment, in addition to the three tractors, consists of a tractor disk plow, carrying seven disks and plowing a total width of 84 inches, two twelve-foot disk harrows, two sets of tooth harrows, two thirteen-foot wooden drags of 6 inch by 8 inch timber, one two-standard subsoiler with standards three feet apart, and one ridger. We also have three power sprayers, but the power required to handle these is so slight that we do not pull them with the tractors, but use horses for the purposes. Our smaller tractor is used exclusively for doing the ridging. The two larger tractors do all of the plowing and harrowing. We do not boast of a horseless orchard. There are nine horses on the place. There happens to be a railroad and a stream bed running through a corner of our property and these cut the orchard up in such a way that there are several small, irregular-shaped blocks. We find it more convenient and practicable to cultivate



Out of the Big Crawler Type Tractors in the Linden Orchard of Hunt Bros. Packing Co.

these with the horses than with the tractors. The horses are also used to pull the sprayers and for other miscellaneous jobs around the place. We load our fruit on railroad cars right in our orchards, so the transportation of our crop is no problem at all.

Proper Tractor Care Essential

We try to take the best care possible of our equipment. I think I would give that as the second rule of tractor success. The first one, you will remember, was: "Never overload the tractor." This second one is: "Give the tractor reasonable care and attention." I suppose there are some tractors that would give an unreasonable amount of trouble, no matter how careful attention they were given. On the other hand, even the highest quality machine will be hastened to an untimely end by neglect or, worse still, by abuse. It is human nature, of course, when a man has trouble with a tractor, to blame the tractor rather than to take the fault upon his own shoulders, but I believe an honest and unprejudiced investigator would find that in a fairly large majority of the cases of so-called tractor failures, the fault lies more with the operator than in the design or construction of the machine.

When we bought our tractors, we bought high-priced and presumably high-grade machines, and figured that if, as we hoped, the manufacturer had done his part in giving us a good piece of equipment, we should do our part in giving it proper attention. We use high-grade lubricants, and use them liberally. During the working season, a careful and complete schedule of lubrication is conscientiously adhered to. When adjustments are needed, they are made promptly, and worn parts are replaced without delay. The

tractors are thus kept in first-class shape and are always ready for service. We consider this matter of good care of so much importance that we employ a good tractor man and keep him the year around, rather than let any ordinary labor run the tractors

years old—has traveled at least 10,000 miles, and while I won't say that it is as good as new, it is unquestionably still good for a long life-time of service.

Recently our tractor man wanted to get married. We built a hollow-tile



On Either Side of the Main Ditch May Be Seen Water Basins About the Trees

and rather than hire a tractor operator at the beginning of each working season, to be released as soon as the season's work is over.

Where there is more than one tractor on a place, the machines can be handled in the orchards by any men who are careful drivers, and they need not possess much mechanical ability, so long as one man—and he a competent one—is responsible for the condition of the equipment. One of our bigger tractors—the one that is three

cottage for him, installed electric lights and running water, modern bath and toilet, and septic tank, which provided very comfortable and agreeable living conditions for him and his wife. He takes a real responsibility and pride in his work and in the performance of the tractors and is vitally interested in their achievements. I believe that a good operator is an important factor contributing to tractor success, though I realize that many who give indifferent attention to this

phase of the matter are operating tractors with more or less success.

Comparisons are frequently odious, but I cannot refrain from pointing out a few of the advantages we find in tractors as compared with horses. Doing work with tractors, and caring for tractors, is far more agreeable work than driving horses and cleaning, feeding and watering them. We keep our tractors housed in a small shed, and a few steel barrels of fuel and oil stand outside. That is a big saving in space and in the investment that would otherwise be required for barns and haylofts. It would take quite a crew of men to handle the horses we would need for our orchard work, if we depended upon animal power entirely.

As for comparative costs of horsepower and tractor-power, I do not propose to present figures, because I have seen published at various times so many sets of figures, some proving one side of the case and some the other, that I am convinced one can prove or disprove anything with figures. Suffice it to say that we are satisfied our work is being done more economically with our tractors than it could be done by any other means.

But that isn't the big point. Even though it costs us considerably more to operate our tractors than to obtain equivalent power in horses, we would use tractors, for they are doing a class of work that we were never before able to do, handling our orchard cultivation just the way we want it handled, doing it quickly and efficiently—accomplishing, in short, the exact results we are desirous of accomplishing. That is so outstanding a feature of the value of our tractors to us that it overshadows every other advantage tractors possess.

Growing Peaches In the Cotton Country

By A. B. Howell, Missouri

WHAT of the future of the "Cotton Belt"? This question is now being asked by cotton growers and business men all over the south. One cotton growing community has quit worrying; it has made up its mind just what it is going to do and has started to work.

Northeastern Texas land owners have been doing some serious thinking for the past few years. With the de-

reached bearing age. The venture was not financially successful for several reasons. In the first place, the trees did not receive the necessary care and as a consequence, the fruit was imperfect and the orchards were short-lived. Then again, every grower followed his

this great section. The possibilities of carefully planted and well cared for peach orchards there were recognized by the far-seeing scientific men of the Agricultural Mechanical College, and with the cordial co-operation of the land owners they started a campaign of orchard education which has resulted in arousing intense interest, and it seems that northeast Texas is destined to become one of the greatest peach growing communities in the whole country.

Working in conjunction with the Agricultural & Mechanical College in this big undertaking are the agricultural agents of the railroads traversing this part of the state, the county agents of the entire section, Texas Farm Bureau Federation, the Texas Chamber of Commerce, East Texas Chamber of Commerce, Local Chambers of Commerce, Texas Bankers

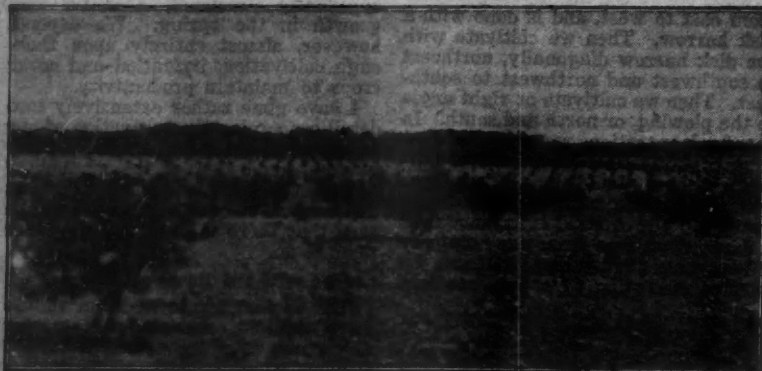
Association, state markets and warehouse commissions, county farm bureaus, and other bodies of men who are striving together without friction and are co-operating in a way that spells success.

This is why Northeast Texas, formerly a great cotton producing center, has a new plan to make big money: To produce big juicy peaches by the hundreds of train loads for the central and eastern markets—and before very long the plan will be working. Even now while the peach idea is only partly formed, northeast Texas will probably ship in the neighborhood of 1,500 carloads of fine peaches.

Organizations Being Formed

These growers are starting right. They realize that, in a community where there are several thousand peach orchards, the individual has a poor chance to sell his crop at a top-of-the-market price. They know that an organization with competent men

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One of the Young Peach Orchards Visited by the Touring Party.

crease in the price of cotton has come the knowledge that cotton cannot be entirely depended upon and that some other crop must be grown. Farmers in this section were in the same condition as those of every other cotton country, and they had grown cotton and more cotton year in and year out until they reached a point where it would not bring enough to pay the cost of producing it—and naturally, looking to the future, they began to think of some other crop that would make their land produce some profit.

Twenty years ago a number of great peach orchards were planted in different parts of Northeast Texas. These orchards, however, were planted mostly by promoters with the expectation of selling them before they

own ideas of marketing; there was no concerted selling plan, no organization, growers lost money and many of these orchards disappeared.

However, these pioneers proved to the Southwest that wonderfully fine peaches could be grown there and when cotton growers realized that they must grow something besides cotton they remembered these big orchards and began to plant peaches in a small way. Many of these orchards now are bearing and proving profitable beyond the wildest dream of their owners.

Texas Peach Orchards Pay

The financial success of these planters opened the eyes of men all over



This Is a Part of the Throng That Spent Four Hot, Dusty Days Viewing the Orchards

Why Sixty-One Per Cent Russet?

By E. H. Favor, Managing Editor

DR. J. H. ROSS, president of the Florida Citrus Exchange, recently issued a statement under the title "Fancy Fruit and Russets" containing data showing the percentage of the four important grades of citrus fruits reaching the auctions in four northern cities through the Florida Citrus Exchange, and through the outside shippers of Florida. A glance at this statement is reassuring of the value co-operative marketing has been to the members of the association, in so far as the average price per box is concerned.

The figures show that the Exchange exceeded the price per box obtained by the outside agencies in every grade. On the other hand they show that of the total volume of fruit shipped by the Exchange to the four auctions, 61 per cent were of the russet grade, 10 per cent of the bright grade and one-third of one per cent of the fancy grade. In contrast to this, the outside shippers totaled 10 per cent russet, 43 per cent bright and seven per cent fancy.

Does this mean that the members of the Exchange are more lax in their production efforts, and permit rust mites and other pests to reduce their volume of high grade fruit? Or does it mean that the outside shippers pull more closely? Dr. Ross would like to see more high grade fruit in the shipments made by the Exchange, for he says: "We want to produce all of the fancy fruit that we can, and we want our percentage of high grade fruit to get larger and larger; but we must constantly bear in mind our duty to the growers which is to sell in the markets the fruit which they have produced regardless of how it may grade, but providing it is fit for human consumption."

That is a worthy and commendable thing, and the same motive should exist in all co-operative marketing organizations regardless of the commodity that is handled. But would it not be well for the Exchange to put more emphasis on the importance of such production work as will place in the topmost and high priced grades the major portion of the crop? It has the necessary educational facilities for doing so, and through the Exchange Supply Company, the materials are available. To make use of these facilities to the utmost, and to produce the very highest possible quantity of



One of the Modern Citrus Packing Houses Located at Orlando, Fla.

top grades would indeed be a conspicuous achievement.

I have no intention or desire to criticize the management of the Florida Citrus Exchange in any particular. I believe in it. I know that it is doing heroic work in the upbuilding of the citrus industry in Florida, and possesses the means of adding materially to the welfare of its membership and the entire state. On that account, I feel that it is somewhat unfortunate that Dr. Ross in his statement, gives so little encouragement to practices that will produce more fruit of fancy and bright grades. In fact, the opening paragraph in his statement, to me at least, admonishes the grower to let well enough alone. He says:

"Wasted Energy"

"While occurrences during the past season have tended to focus attention upon the prices brought by fancy grades of Florida citrus fruit, it must be borne in mind continually that only a very small percentage of any season's citrus crop may be graded as fancy. Therefore if we give too great attention to fancy fruit and the price it brings we are apt to reach some false conclusions and some that may be even dangerous."

In another paragraph he writes: "It has been our experience that such fruit to a considerable extent sells itself in the markets. By this I mean that when fancy fruit is offered from any source of known reliability there are a sufficient number of takers willing to pay an added price for fancy grade, so that any extraordinary effort exerted in putting forward fruit of fancy grade largely is wasted energy."

If fancy fruit sells itself, then why not concentrate the effort on the production of the maximum volume of that grade? Why waste time and money in trying to sell fruit that hardly pays its cost of marketing, as in the case of russet citrus?

The chief difference between fancy or bright fruit and that in the russet grade is simply in the appearance of the skin. The russet fruit is so named because its beauty has been destroyed by the rust mite—a pest so easy to control that it is amazing citrus growers will permit it to exist in their groves. It is even more amazing that members of such a splendid co-operative association as the Florida Citrus Exchange will tolerate this pest.

Something is wrong with the crop

protection efforts of Exchange members when more than 61 per cent of their fruit grades as russet. While I agree with Dr. Ross that it would be wasted energy to force the sale of fancy fruit when barely one-third of one per cent of the output falls in that grade, I question the value of permitting production methods to continue which allows so great a volume as two-thirds of the output to go into the bottom grade.

The Florida Citrus Exchange has been doing a great deal of very constructive advertising for its fruit. It also is doing some very excellent work among dealers in teaching them how to sell more "Sealdsweet" citrus. Undoubtedly it was the money and energy that was put into this work that enabled the Exchange to make the splendid price accomplishment of the season just closed. But to speed the turn over of the vast crops that are coming in the near future, it is imperative that production measures be practiced that will enable the largest possible volume to be sold at the least cost.

Right Spraying Will Do It

More intensive spraying will aid in bringing this about. Although spraying has come to be a fairly well established practice in Florida groves, the figures given by Dr. Ross show that the results are very poor and too much fruit is damaged by the rust mite. There is one explanation for this, and that is that the spraying is not done with sufficient thoroughness. A letter I have just received from a correspondent in Florida emphasizes this fact, and at the same time reiterates some of the points I have quoted from the statement of Dr. Ross. This correspondent says:

"From my experience I have come to the conclusion that we need more intensive rather than extensive spraying—at least in order to start the ball rolling toward the goal aimed at. The great lack of interest among Florida fruit growers in spraying is occasioned by continued and widespread poor results, which are caused by two things, i. e., lack of thoroughness in the actual performance of spraying, and ignorance of the simple problems connected with spraying, such as the time element, proportions of mixtures, hard water, etc., etc. Very, very few grow-

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Pear Culture Becoming More Popular

By C. I. Lewis, Associate Editor

PEAR culture is rapidly becoming of greater importance all over the Pacific coast. The interest in California and the Pacific Northwest in this fruit is steadily on the increase, owing to the fact largely that the fruit on the whole has been profitable to grow. Commercially, pears are grown in a good many states of the union. According to the census of 1910 the number of pear trees in some of the leading states are as follows:

New York	2,141,596
California	1,410,996
Michigan	1,136,151
Ohio	899,019
Pennsylvania	796,882
Illinois	786,840
New Jersey	731,616
Indiana	708,723
Missouri	606,937
Texas	558,478
Virginia	457,177
Delaware	449,692
Maryland	540,683
Kentucky	337,355
Kansas	292,383
Washington	290,676
Oregon	273,542

It must be borne in mind that probably in some of the eastern states in the last ten years, there has been an

actual decrease in the number of pear trees whereas in the Northwest and in California, there has been a tremendous increase. As regards the acreage in California, the following is of interest:

"On authority it was recently stated that there were 40,000 acres of pears in California and that pears are being planted at such a tremendous rate that the tonnage there of Bartlett's alone, will soon be enormous. About 90 per cent of the pears of California are Bartlett's. The tonnage in 1920 was 85,000 tons. The previous year it was over 100,000 tons. For 1921 the estimates are for 130,000 tons; 1922, 150,000 tons; 1923, 170,000 tons, and 1924, 190,000 tons."

In Oregon the latest report shows 13,212 acres of pears. The Rogue River valley is rapidly becoming primarily a pear district. There have been very big increases in such valleys as the Willamette, Umpqua, and at Hood River. In Yakima and Wenatchee the tonnage has been on the increase until now a normal crop of pears in the Pacific Northwest of Bartlett's alone is about 3,000 cars.

In growing pears there are several points which stand out strong and which should be considered. For years, the French root was used for stocks. It has the advantage of being widely adapted to many soils, but it is subject to the attacks of the root louse. It is also hit hard by the blight.

In the last ten years, most of the pears planted on the Pacific coast are put on what is known as the Japanese stock (*Pyrus serotina*). This is a rapid grower, easy to bud and graft, fairly resistant to blight but not very well adapted to heavy soils, or soils of questionable drainage and in heavy soils does not stand deep planting.

Prof. F. C. Reimer of the Southern Oregon Experiment Station, Talent, Oregon, has the largest collection of *Pyrus* in the world today and perhaps the largest number of varieties of pears. The two varieties which he has been trying out with greatest promise, are *Pyrus ussuriensis*, and *Pyrus calleryana*. The *ussuriensis* is an extremely hardy variety growing in Manchuria and Siberia. The wild forms, however, are extremely slow

growers. Are too slow growers for the rapid growing European varieties. This variety, however, is not only hardy but is practically as resistant to pear blight as one could hope for.

There are some varieties of this strain which Prof. Reimer is now growing which are more rapid growers and which hold out great promise to us not only for stock purposes, but because they are adapted to commercial purposes themselves having high qualities, which heretofore have not been expected in Oriental pears.

The *P. calleryana* is a very vigorous tree, seemingly will grow in any soil conditions, even heavy soils. The tree is hardy, very free from insects and diseases. It stands next to the *ussuriensis*, being resistant to blight. Its wide adaptability to soil may make it a favorite stock in years to come. It is only a question of a short time before commercial nurseries will have these desirable stocks for sale.

There are several American varieties that are more or less resistant. The Surprise of the middle west is being used quite a great deal as a stock and is being double worked. Strange as it may seem, however, the Surprise, a nursery tree, recently double worked,

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With Our Editors

The Shrinkage En Route

IT WOULD BE interesting to know the percentage of a fruit crop loaded on cars by the shipper which actually reach the consumer. The shrinkage or loss between the two ends of the route is considerable, even under ordinary conditions. There is an indefinite and exceedingly variable factor that accounts for the loss between producer and consumer. Sometimes it may be avoided by a correction in the packing methods, and sometimes by an improvement in the production routine. Sometimes the waste may be attributed to delays, avoidable or otherwise, while the product is in transit or storage, and sometimes to a multitude of other things.

But there is a loss. It is wisdom on the part of the producer or shipper to anticipate this loss as completely as possible and take such steps as will lower it to a minimum. Georgia peach growers, for example, have seen splendid peach crops packed and shipped only to find them arriving at their destination so badly damaged by brown rot as to make them worthless. Citrus fruit growers have shipped many cars of their crops, only to find a shrinkage of many percent by the time the fruit reaches the receiver.

Recently the W. F. Maloney of Ward Line of steamers carrying the pineapple crop from Cuba to New York called attention to the burdensome accumulation of empty pineapple crates at their New York pier No. 14 East River. Two hundred to four hundred of such crates are left weekly during the season, from the reconditioning of the fruit. Here is a waste not only of the rotted fruit that must be thrown out, but also of the transportation cost for getting the fruit to the reconditioning point, of the crate material, and of the disposal of the rotted fruit and empty crates.

Berry growers, apple growers, and the producers of all fruits that are shipped long distances experience losses more or less similar to that mentioned by Mr. Maloney. In most of the cases mentioned, better spraying or other cultural methods would have put the fruit in better condition to have withstood transportation. This, along with careful packing and proper refrigeration in transit would go a long way toward reducing the losses.

To the consumer who must pay high prices for the fruit he buys at retail, it is appalling to see the great waste that occurs between himself and the producer. "Why isn't it stopped?" he exclaims. He pays for it in the higher price for what he gets. And the producer pays for it too in the margin that must be allowed to cover the expected loss. Individual growers and communities that have established a reputation for good fruit suffer less than those known to be careless. It pays to be careful.

Readjusting the Market

THE RETRENCHMENT in the activities of canning establishment this summer has made it necessary for fruit growers accustomed to supplying the canneries, to find some other market. This has been especially the case with fruit growers on the Pacific Coast. Prof. C. I. Lewis of Oregon states that more fresh fruit is this season being shipped from Pacific Coast points to eastern markets than has been customary because

of the low prices offered by canners. It started in California. There, the strawberry growers were offered 3½ cents for most of their tonnage by the canners. This price was not attractive to those who had fruit to sell. By means of advertisements in nearby towns, these strawberry growers were able to dispose of their entire tonnage at 8 cents. Cherry growers, likewise found a new market. They were offered from 3½ cents to 5½ cents for their crop, but found that eastern markets could absorb from thirty to forty cars a day at a price to the grower of 16 to 17 cents. Chicago, Boston, New York and other distributing points have been very well supplied this season with most excellent Royal Anne (Napoleon) cherries. Some 500 tons of these were shipped from The Dalles, Ore., alone. Solid cars of Lambert rolled out of the Willamette valley, and other northwestern producing points, for eastern cities, much of the fruit being put up in a new package—a box holding 18 pounds and known locally as the "signal lug."

As the pear growers of the Pacific Coast sections are being offered prices ranging about 40 percent lower than last year, these growers have their eyes turned eastward. It is probable these pear growers will do just as the strawberry and cherry growers have done, and not only obtain a much better price for themselves, but at the same time provide an ample supply of fruit to fill the vacancy caused in eastern orchards by the Eastern freeze and its successors.

This shifting of the markets will provide some interesting lessons for western producers, as well as for eastern receivers and consumers. If it was probable that circumstances should recur in the immediate future which would continue this readjustment of market plans, some embarrassments might be occasioned eastern growers. But as it is, with eastern fruit crops much lighter than usual, consumer will not have time to lose their taste for fruit. Next year business conditions will surely have settled themselves so that canners can take their usual supply at satisfactory prices for the grower, and only the normal quantity of western fruit enter into competition with that grown in the east.

What of the Fig?

WITH CHARACTERISTIC pluck and persistence, California fig growers have accomplished the impossible this summer in providing a taste of fresh figs for eastern consumers. For the first time in history a full car load of fresh figs have reached Chicago and New York from the land of sunshine and flowers. Their excellent condition upon arrival doubtless will give encouragement for additional car lots when the second crop of figs reaches maturity. But no matter if shipping arrangements and markets are not in condition to receive more fresh figs this year, the proof exists that fresh figs can be shipped across the continent. This is an achievement, and a stepping stone that undoubtedly leads to a business of vast proportions. It is not only the marketing of a new fruit in a new territory but it marks the surmounting of another "impossibility."

The fig in its dried form long has been a staple article of commerce; coming into

this country mostly from foreign lands. But the fresh fig has been entirely unknown outside of the regions in which it is grown, because of its perishability. There its goodness was well known and fully appreciated. But in this vast country of ours almost three fourths of our population live outside the region in which figs may be grown, and have had no acquaintance with the fruit except in the dried form. Neither do they know of many other dainty and delicious fruits that can be grown only in warm climates.

Now that a way has been found to pack fresh figs and ship them to far distant markets, who knows but what there are better prospects than ever for the marketing of perishable fruits from the tropics and sub-tropics? We look upon this appearance of car load lots of fresh figs as an epoch making event, and one of great significance. Not only does it add a most delicious new fruit to the consumer's list, but it adds a new competitor for the eastern grower of berries and other soft fruits of mid-summer. While it is quite true the volume of fresh figs that will enter eastern markets this year, or during the next several years, will be relatively small, their influence will be felt. As the volume is increased and the price lowers to reasonable limits, consumption will increase, and it takes no far stretch of the imagination to see canned and preserved figs on the cellar shelf along with the familiar berries, cherries, jellies and jams.

While excitement among fig growers doubtless runs high over their new accomplishment, it should not result in an epidemic of fig planting. Doubtless there will be somewhat of a boom in fig growing circles. But the acreage should not be extended too fast and force the infant into the grief that has followed other fruit booms on the Pacific Coast.

A Better Substitution Plan

SUBSTITUTION IN trees when filling orders for nursery stock is one of the evils that exist in the nursery trade. But it is slowly passing out of existence as nurserymen become better business men and learn better trade practices. It surely will not be many more years that reputable nursery firms will substitute trees when filling orders, at least not in the dishonest manner that has existed in the past.

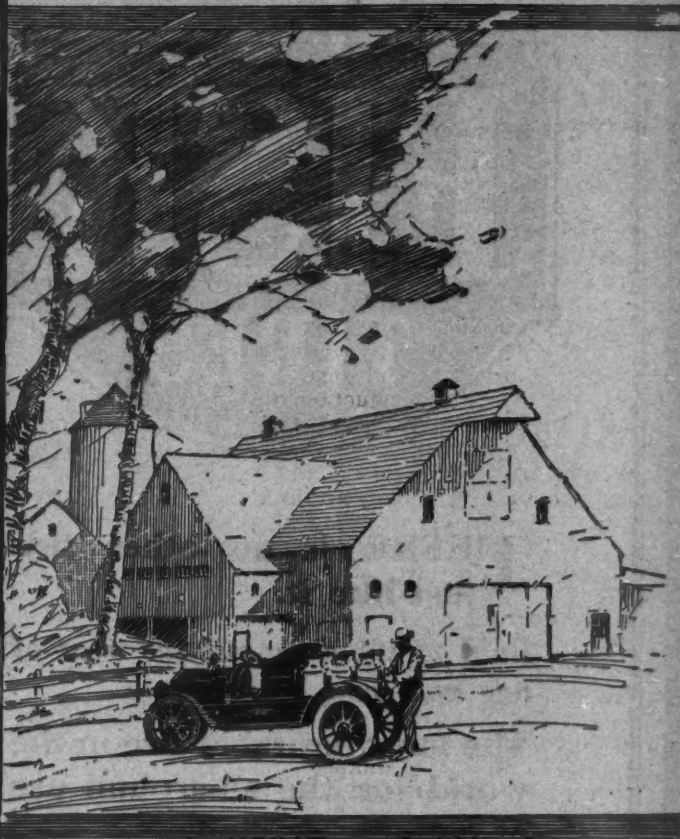
While substitution should be discouraged, one prominent nursery firm has a practice that is not only honest and fair, but deserves to be commended. This particular nursery, when an order is received that contains some variety it cannot supply, puts into the order some similar kind, properly labeled. Then a second label is attached bearing the statement that this variety is sent in place of such and such a variety that was ordered. If this substitute is not wanted, to accept it anyway as a gift from the nursery. Then upon the return of the second label to the nursery the variety originally ordered will be sent at the beginning of the next season.

There is nothing dishonest or unfair about such a plan. A nurseryman who will adopt this form of substitution shows that he is doing all he can to supply trees that are true to name and trying to give his customers a square deal. More nursery firms should take it up in place of the prevailing practice.

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Orchard Problems and their Solution

by Paul C. Stark
Associate Editor

Treatment of New Trees

Kindly give me some good advice regarding pruning of small trees that were set out last fall. Apple, cherry, pear and plum. When shall I prune in central New York state? What kind of fertilizer will make them grow fast, and how much? I have a fairly large apple tree with very rough bark, and some worms which seem to bore into the trunk of the tree. How can I cure this tree? Should the rough bark be scraped off and white washed? Or, will spraying help to fix up the tree trunk? Should the ground be loosened up around over the roots or not? What is the proper time for spraying apple trees?—J. J. R., New York.

IN EARLY spring is a good time to prune your trees. Your trees were set out last fall and it will be all right to prune them any time this spring. However, the writer prefers to prune newly planted trees just after the buds have started well, so that it is possible to tell just which buds are going to start out and make strong growth. If your ground is fairly rich, you will probably not need a fertilizer. Barnyard manure will add plant food as well as humus. Some orchardists use nitrate of soda or sulphate of ammonia just as trees are starting first season's growth. However, many people prefer to wait until trees have made at least one season's growth before they use a fertilizer. The writer is applying one-half pound of nitrate of soda to his young orchard this spring.

In regard to your old tree, you should give this tree good cultivation, pruning and spraying. It is too late now for you to give your dormant spray, but you can give the rest of the regular spray applications for the control of scab, codling moth and other insects and diseases. Lack of space prevents giving full description in detail for spraying. However, you can get this from your state experiment station. The worms you mention are probably the apple tree borer and should be cut out. It is a good plan to scrape off the rough bark, as it forms a hiding place for insects. White washing will probably not keep the borers away, but the whitewash will not do any harm.

Dynamiting the Subsoil

I have about an acre of peaches, apples, pears, plums and some small fruit. I have been very successful with all of it except some of my apples which don't seem to make as good body growth as they should, although they make considerable new growth each year and in every other way seem to be very vigorous. Our soil is a very heavy clay, the subsoil being so hard that a root could not penetrate it. I have been considering shooting this subsoil with dynamite between the trees sometime when the soil is sufficiently dry to break up well. Do you think this a good idea? When should the shooting be done?—W. E. B., Kentucky.

IF YOUR apple trees are making a vigorous top growth, the body of the tree will naturally make a good growth. It is a good plan to let a lot of the small short branches along the main trunk grow for several years, as these will produce leaves and the more foliage that is produced the more growth the trees will make. These numerous small branches along the trunk of the trees will increase caliper growth. With reference to your heavy clay subsoil, from your description I would judge it would be advisable to dynamite, as this will break up the subsoil and let the roots go down deeper and have a wider range for their development. You have the right idea about dynamiting when the soil is fairly dry. Dynamiting wet soil

does more damage than good. August or early September would be a good time to do your dynamiting unless your soil is quite dry at this time, in which case you might do some of the dynamiting now. Turning under a good crop of clover will be very beneficial to your soil and will help to lighten it, as it adds humus as well as nitrogen.

Trees in Chicken Yards

Would it be all right to plant pear, apple, quince, plums and cherry trees in the chicken yard (young trees)? If not, why not? What are the best fertilizers for above trees?—G. L. P., Missouri.

THE CHICKEN yard is generally bare of grass, soil beaten down, caked and solid and is not a very satisfactory place for the average fruit tree. However, the plum does well in the chicken run and is largely used for the purpose. I would not advise you to grow fruit trees other than plum in your chicken yard if you can put them elsewhere.

As to fertilizer, if you have plenty of good rotted stable manure or chicken manure, use it on your trees—it is all right for any of them and will give you good results. Wise orchardists who can secure it, use it largely. Of course, if you have a good sized apple orchard and cannot secure manure for fertilizing purposes, you can profitably use nitrate of soda. If your trees are old, it is safe to use about 4 to 6 pounds in the spring. In other words, spread it around the tree as far as the limbs spread, keeping it—say two to three feet away from the trunk of the tree. If you have young apple trees and the growth is not as strong as you wish, use nitrate of soda in small quantities. In my young orchard this year I am using about one-half pound to the tree on trees that have been planted one year. It stimulates the growth and I believe is pushing the growth of trees while they are young.

Arsenate for Eating Insects

How much arsenate of lead to the gallon of water should be used on trees to kill eating insects on the leaves? How much nitrate of soda to put around young trees just set out? And when is the best time and best method to use, etc.?—J. W. H., Tennessee.

ARSENATE of lead powder should be used at the rate of one and one-half pounds to 50 gallons of water. If you use the arsenate of lead paste, use just double this amount (two and one-half to three pounds of the paste to 50 gallons of water).

In good soil it is not necessary to fertilize young trees that have just been set out, although manure serves as a mulch and also as a fertilizer. On ground that is not rich and requires fertilization, a small application of nitrate of soda, a quarter of a pound to each tree, is recommended by some authorities. This should not be applied until after the tree starts to leaf out as the tree roots cannot take up the nitrate until the tree is really started to make some growth.

A Neglected Tree

I have a cherry tree about seven years old that has about one-third of a crop each year. It stands in back yard near grape arbor. Is never worked, sprayed nor fertilized. What does it need?—W. F. B., Illinois.

FROM your description of your cherry tree, I would advise you to apply barnyard manure, keep it well hoed and carefully sprayed. If the ground is rather damp and has green moss on it, or it has indications of being sour, I would apply lime to the soil.

Hyacinths are commonly regarded as the most beautiful flowers that can be grown indoors for winter bloom.

Peaches in Texas

(Continued from page 4)

visiting the markets of the country who are in constant touch with buyers from all points of the compass can be a big factor in marketing their fruit, and they now contemplate organizations that will cover the district thoroughly. In fact, the organization is now well under way.

Their plan is modeled largely after the California peach growers' organizations and also along the line of the tomato growers' association of north-east Texas, which now has 2,300 members and 80 per cent of the total acreage of tomatoes there are grown by members. The growers realize that organization is necessary and every one seems enthusiastic and ready to do his part.

In the past northeast Texas has shipped largely to Chicago, St. Louis, Cincinnati, Denver, Omaha, Kansas City. The plan now is, when properly organized, to make a scientific study of marketing and to ship the fruit where it is needed and avoid congestion of the big markets as far as possible. This organization plans not to restrict production, but to prevent over-production by increasing the markets. The leaders believe there is a good market at a good price for every barrel of peaches that can be grown and they purpose through proper methods to find these markets.

A Trip Through the Orchards
Realizing that nothing is more instructive than object lessons, the A. and M. College recently organized an automobile trip through these orchards for the purpose of demonstrating the necessity of cultivating, pruning, spraying and fertilizing orchards. Orchardists and prospective orchardists throughout the state were invited to make the trip which was under the direction of Mr. M. E. Hays, Extension Horticulturist of the A. and M. College and a peach enthusiast.

The trip was timed so that those who made it could reach Highland, Arkansas, on May 27th, on which date a great meeting of peach growers was to be held in the world-famous peach orchards of Bert Johnson, which was to be largely attended by orchardists from Arkansas, Oklahoma and Texas.

The start of this trip was scheduled for the morning of May 24th from Tyler, Texas, and about fifty men met there on that date. Ten automobiles loaded with growers left there at eight o'clock for the four day journey.

1000 Acres of Trees

The first stop was at Winona, about fifteen miles distant, where the great peach and peach orchards of Mr. Butterfield were visited, and his methods of cultivation and general orchard work were explained. This orchard was planted twelve years ago; the peach trees were planted 8 1/4 feet apart, and peach trees were used as fillers. Most of the peach were removed last season and the balance will come out this fall.

This is one of the largest peach orchards in the country—over 30,000 trees in bearing. Mr. Butterfield explained that the peach trees between the rows of peach trees had paid for the land, for all the expenses of growing the orchard and have shown a good profit, and that now he would give the peach trees all the space. They are just beginning to bear profitably and it was the opinion of the visitors that they would rather own that orchard than any thousand acres of oil land in the state.

Following the visit to this orchard, the growers visited Lindale, Mineola, Quitman, Winnsboro, Mt. Vernon, Mt. Pleasant, Omaha, Naples, Atlanta, Texarkana, Texas; Hope and Highlands, Arkansas, and inspected the best orchards all along the route. The trip was well advertised and large delegations met the growers at every point. Many of these delegations were headed by the local County Agricultural

(Continued on page 11)

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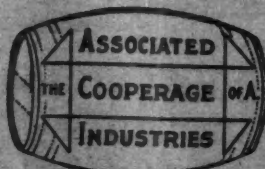
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Charles A. Green's Walks and Talks With Readers

Fruit Thieves

COMPLAINTS are being made that burglaries are being committed all over this country on orchards that border or are near the highways. The automobile seems to be helpful to various kinds of thieves for the reason that they can get away so quickly after a robbery has been made. This has been shown by numerous holdups of banks and jewelry stores. The plunder has been thrown into an automobile and in a few minutes the automobile is out of sight or out of the city or place where the crime was committed.

It does not take long to load up an automobile with fine apples, peaches, plums, pears, grapes and other fruits and to get them out of the town or county quickly through automobiles. The question is, what shall fruit growers do with regard to this impending and increasing problem? Should the fruit grower protect his property with a shotgun loaded with buckshot? I would say "no" to this proposition. I do not think that the stealing of fruit would warrant shooting the robber, but I do think that the owner of the fruit would be warranted in clubbing or knocking down the robber, which is as near coming to the killing point as I dare recommend.

Strange as it may seem, the stealing of fruit is not looked upon by many people as a serious crime. Robbers when found carrying off fruit have claimed that the fruit seemed to be produced spontaneously without any care or expense and therefore that it belongs to the community or that part of the community helps itself. Unripe fruit is not so likely to be disturbed as fruit that is ripe and well colored, therefore exposed orchards might be protected somewhat by picking the fruit a little earlier than ordinary. Some fruit is more easily gathered and taken away than others. Apples and peaches are most easily picked, whereas plums and cherries are more difficult to pick; that is, must be picked more slowly and are less liable to be carried off by thieves.

The stealing of fruit in old times was limited to the quantity that the interloper could eat or carry away in his pockets. It is only of recent years that fruit stealing has been made a business and that the fruit has been loaded into automobiles and taken immediately to the city market and sold and a new expedition started, thus the orchard favorably located for stealing is preyed upon over and over again, perhaps by the same individuals. The fact that thieves may be operating at the farther end of an orchard that is but a short distance from your house may be owing to the dense foliage, which is in favor of the thieves. If the judge presiding in the court deals harshly with the fruit thieves it may have the effect of lessening the injury done. Thieves should be taught that fruit stealing is just as much a criminal affair as stealing diamonds or watches or other similar property.

The Hired Man

WHEN considering scarcity of farm laborers it may be well to recall the fact that many farmers provide poor accommodations for their laborers. My father was a liberal minded man but he had a large family and his farmhouse was fully occupied before the hired man's accommodations were added to his own. The result was that five or six of the farm laborers slept in the attic. It was a large roomy attic with good ventilation. I do not think the men suffered there, but it was not exactly the kind of a room that would be selected if one could have his choice. The attic was not divided into rooms therefore there was no privacy. As a boy on

the farm I have heard laborers complain of the board offered at the farmer's table. Many of these complaints were without foundation, but it should be borne in mind that those who labor should have as good accommodations as possible. If they have not as good accommodations on the farm as others do in the city, here is one reason why some of them leave the farm.

Fence Posts Rotting

AS A BOY on the farm I noticed the perishable nature of fence posts. Those most used were of oak. I discovered that some of the posts would rot off much sooner than others. In fact some of the posts would last almost twice as long as others, but I could not account for this phenomenon. Now we are told that the heart wood of a tree lasts much longer than the outer or sap wood lasts, thus there is no longer any mystery in regard to the varying dates of the decay of fence posts. The sappy wood on the outside of the posts is exceedingly perishable while the heart is long enduring, and yet there are some soft woods like poplar or hemlock which are entirely perishable, no matter whether composed of sap wood or heart wood. Red cedar is the most enduring wood with which I have any experience. I recently dug up a landmark of red cedar made sixty years ago. I could not discover any indication of decay on this post. Yellow cedar is more enduring than most woods but nothing like so lasting as the red cedar.

Half Bushel Boxes

APPLE growers of the eastern and middle states do not seem to understand that the consumers of apples do not like to order a barrel of apples at one time. There are few consumers who have a place for storing a barrel of apples and a barrel of apples, if they did not rot, would last an ordinary family nearly half the winter or perhaps longer. My opinion is that if apple growers would use a half bushel box or a peck, or any kind of a container that would hold a peck or half bushel, they would find sales to consumers greatly increased. There is certainly something wrong when apple growers of the far west can ship their fruit into the eastern markets, and after paying heavy freight bills make a profit, while in many instances the eastern apple growers are unable to sell their product at a profit.

These far western orchardists do not ship their fruit in barrels. They ship their apples in small boxes, holding perhaps about a peck. This is about all the average consumer desires to buy at once. If they buy a barrel of apples and put them in their cellars, nearly all of which have a furnace, and lose half of the barrel by rot, they are not inclined to make another purchase, but if they buy a small box and consume them all, they are ready to buy another box later on. Many people cannot spare the money to pay for a barrel of apples.

There are, then, three good reasons favoring the small package for apples: 1st. The buyer does not lose by rot. 2d. The smaller package is more easily handled or carried. 3d. The buyer is not called upon to part with so much money all at once.

Flies like garbage but they don't like borax. A tablespoon of the latter to each peck of the former will keep flies away.

Peaches in Texas

(Continued from page 8)

lural Agent, who acted as guide and directed the travelers to the best orchards in the vicinity.

Entertainment was furnished at all points—a big dinner at one place, a barbecue at another, a fish fry at another, and while the growers appreciated these courtesies they never for a moment lost sight of the real reason for the trip, so at almost every stop they listened to talks on orcharding, watched demonstrations of spraying, cultivation, and other orchard operations. They made the trip to learn everything they possibly could and they made every minute count.

As the trip progressed the procession grew, as nearly every town added to the long line of automobiles until Highland, Arkansas, was reached, when ninety-two loaded cars were in line.

The drive from Tyler to Texarkana was for the most part over magnificent roads—new roads which are being built all over that community. A native gravel is being used that packs readily and easily and makes a wonderful roadway. Good roads and peach orchards seem to be the predominant ideas in that section now.

When Texarkana was reached, the details of the trip were in the hands of Professor Woolsey and N. D. Zuber who landed the long procession of cars at the Bert Johnson orchard, Highland, Arkansas, shortly after noon Friday, May 27th.

America's Greatest Peach Orchard

The Bert Johnson orchard is one of the seven wonders of the Horticultural World—4,400 acres in peach trees. For miles and miles the procession of automobiles passed slowly through these great orchards. They were in a perfect state of cultivation, with scores of sprayers and dusters at work, dozens of cutaway harrows drawn by tractors, every tree pruned to just exactly the proper shape, with the limbs of the trees low down, the top of the trees open to admit the sunlight, and all limbs so low that practically all fruit could be picked from the ground. Few ladders will be required at picking time in this orchard.

Mr. Johnson took the lead when the orchards were reached. He explained in detail his methods, he showed the visitors through his packing houses, fertilizer plant, power and light plant, and finally after a two-hour drive through the orchards, he was called upon by Professor Woolsey to address the crowd from the platform of one of his packing houses.

This was just what the Texans wanted. They were an inquisitive bunch—many of them had traveled three hundred miles through the heat and the dust to see this orchard and to learn everything they could about his orcharding methods. They had questions they wanted to ask, and they proceeded to ask them.

For over an hour he talked about the practical, fundamental principles of peach growing and gave his experience in buying nursery stock, planting, pruning, cultivating, spraying, picking, packing, and selling. This informal talk was most interesting and instructive and was declared to be the big event of the trip.

Northeast Texas peach orchards will, in the future, reflect the results of this trip. Those who were lucky enough to be in the party reached their homes better equipped to take care of their orchards than they were when they started. The farmers of that country are laying the foundation for a great peach orchard community and before many years, thousands of men who have been growing cotton on a very small margin of profit will be supplying the great Eastern Cities with Elbertas, Early Elbertas, J. H. Hale, Red Bird Clings, and all the other good ones—and they will require these figures to write their profits to an acre.

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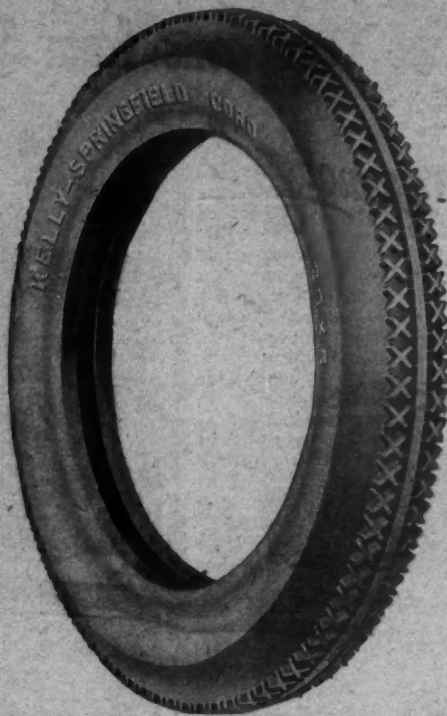
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COMPARATIVE PRICE OF SULPHATE OF AMMONIA AND NITRATE OF SODA

In the July number of the *AMERICAN FRUIT GROWER* R. E. B. asks about the comparative merits of sulphate of ammonia and nitrate of soda and questions the advisability of paying \$70 a ton for nitrate of soda, or \$85 a ton for sulphate of ammonia.

There is abundant evidence that R. E. B. may expect similar results regardless of which one he applies, provided he uses the same number of pounds of nitrogen in each case and applies the fertilizer at the correct time. At the prices named he can effect a considerable saving by using sulphate of ammonia rather than nitrate of soda. When nitrate of soda is quoted at \$70 a ton, an equivalent price for sulphate of ammonia is \$67.50. Since he can buy it at \$85 a ton he should buy nitrate of soda at \$60.60, instead of \$70.—Gail T. Abbott.

Looking at it the other way, if sulphate of ammonia is going to cost \$85 a ton he should buy nitrate of soda at \$60.60, instead of \$70.—Gail T. Abbott.

A good school building in one district becomes an object of envy in another.

Pear is Popular

(Continued from page 5)

did not resist the cold of our winter a year ago as well as could be hoped.

The last few years there has come to light a very interesting fact concerning the bearing of the d'Anjou and Comice, which are both shy bearers under normal conditions. It has been found that where these varieties are double worked they are apt to be more productive. So far the productive orchards are largely on Kieffer. It may be some of these other oriental stocks would tend to force these varieties into heavy bearing.

Pollination

While the Bartlett is self fertile, under average western conditions, most of our other varieties are not. The d'Anjou and Comice especially need other varieties with them. The d'Anjou is an early bloomer, will rarely set fruit well more than three rows distant from a Bartlett or some even earlier bloomer, than the Bartlett such as the Clairgeau. The Winter Nelis probably is the standard pollinizer for the Comice.

There is a correlation between pollination and pruning. The d'Anjou especially seems to bear much better where the trees after reaching bearing age, are pruned rather severely. Work carried on in the Medford district years ago, demonstrated this and recent experiments in western Oregon show that the d'Anjou tends to furnish more blossoms than will set. The pruning limiting the number of blossoms to receive the sap, seems to encourage a better set of fruit.

Pear trees should be given rather regular pruning and some of the very old trees which have huge clusters of weak spurs, can be reinvigorated rapidly by spur thinning, thinning out one-fourth to one-third of the spurs.

Harvesting Is a Big Problem

The harvesting of pears is one of the most acute problems to master. The Oregon Agricultural College has probably carried on more investigations along this line than any other group of investigators, and their bulletins are available to all pear growers in the Pacific Northwest. The United States Department of Agriculture is carrying on some very effective work in California and also doing some work now in the Pacific Northwest.

The Oregon experimenters have worked out a machine which might be called an electric thumb. They have found that there is a correlation between the amount of pressure that it takes to dent a pear, and its maturity. The earlier Bartletts tend to be stringy and acid and tend to scald in storage. The mid-season Bartletts are of superior quality and of the best carrying quality. The very late Bartletts while being of superior size and of splendid eating quality are poor keepers.

It is possible that the use of oil paper wraps such as Dr. Fisher of the U. S. Department of Agriculture in his investigations at Wenatchee, is using, may be a factor in increasing the carrying powers of the late picked Bartletts. Nearly all authorities are coming to agree more and more that the earlier varieties of pears at least, should be precooled thoroughly before shipping if best results are to be obtained.

Varieties

Of course the Bartlett is the standard pear grown, and probably always will be. In California it is almost the only pear grown in some of the larger districts. The Bartlett, however, is only a summer pear, and there is ever increasing interest in the later keepers. In a few sections such as the Rogue River, the Howell is quite often a profitable pear, bringing 35c to 40c a box more than the Bartlett. The Anjou has always been a great favorite and for those who love an acid pear, one that is sprightly, having a great deal of snap and quality this pear will appeal to them.

Why The Russet

(Concluded from page 5)

ers get as much as 90 per cent results from spraying. If a goodly number did get even 90 per cent results, the rest would follow suit either from choice or necessity.

"We are approaching the time in Florida where, unless nature intervenes, overproduction will become a reality rather than a myth. I have argued that growers will have to encourage the product and by-product industries so that they may have an outlet for certain low grades of fruit and thus in a measure stabilize the industry. But certainly growers are going to have a spray, especially for rust mites, because bright, high grades of fruit will sell and the low grades will not pay for the handling. In four years Florida's citrus crop, all things being equal, will be four times as large as it was last season. This is because of the many thousands of young trees coming into bearing. Consumption of citrus fruits is not going to be able to keep pace with this enormous production. My argument to growers would be to do two things, viz., first, to spray conservatively but thoroughly in an endeavor to obtain the highest possible percentage of the better grades; and second, to lend some encouragement to the fruit product and by-product industry in order to be able to dispose of all fruit not marketable in the ordinary way.

"It has always been preached in Florida that California citrus fruit has sold because of its attractive appearance. Certainly if this be the case, Florida should do all in its power to put as much high grade fruit on the market as possible. For this reason, with all due respect to Dr. Ross, I think his recent published statement relative to fancy fruit and russets is untimely. While it contains some good logic from the standpoint of the Florida Citrus Exchange, yet to use an Irishism, his article contains 'negative encouragement.' Even though it might be true, it will likely make growers satisfied with conditions as they are. That is one great trouble with Florida as a whole today—too much smug satisfaction with conditions as they are. Under present conditions, and with the future looming up as it does with untold new problems to contend with, I should think it would hardly be 'wasted energy' to put forth an 'extraordinary effort' to raise fancy or bright fruit."

The Money Loss

On the basis of the figures given by Dr. Ross, if the percentage of the various grades shipped by the Exchange were the same as those of the outside shippers, the cash returns would have been about a million dollars better. In other words, to maintain the rust mites and other pests in your groves cost this sum for just the fruit shipped to the four city auctions. How much more should be added to this sum for the fruit shipped to buyers outside these auctions? Certainly the grand total would make a staggering figure. Why do you put up with it?

It is no more difficult to produce a crop of high grade oranges or grapefruits in Florida than it is to produce high grade peaches in Georgia, or of apples in Washington, New York or Arkansas. But I fear that, just as my Florida correspondent has stated, there is too much smug satisfaction with things as they are. Some day, however, Florida citrus growers will wake up to the imperative need for the most intensive spraying and crop protection measures that can be had. Big crops are coming. When they do arrive, then it will be highly important that the largest possible volume of fruit will be of such grade as will sell itself, so the effort can be put behind the kinds that sell slowly and with difficulty.

The real key to the situation is in

the spraying machine properly used. The right kind of spraying will reduce the percentage of russet fruit to a quantity that is almost negligible and increase the volume of fruit that sells itself to a very respectable proportion of the crop. That, in my opinion, is the ideal to strive for, and it can be reached. But it will not be reached if citrus growers continue to put their sprayers in the barn in July for the rest of the season.

The fall brood of rust mites and white fly if uncontrolled can create enough havoc in the few weeks of their existence to put into the russet and cull grades a high percentage of otherwise excellent fruit. More than that, in all applications of spray that are made to citrus, there must be some real intelligence as well as brawn put into the work. In this respect, citrus is no different from apples, peaches or grapes.

In the government laboratory at Orlando, Professors Winston and Yothers have a fund of information on spraying citrus fruits that is of great worth to Florida growers if it is just put into use. In the agricultural college at Gainesville, Professor Watson and his colleagues have similar information possessing a real cash value when in the heads and hands of citrus growers. The Florida Citrus Exchange has specialists on production measures who can aid in the solution of almost any production problem. Most of the fertilizer companies, insecticide companies, spraying machine dealers and farm papers have on their respective staffs highly trained specialists in every phase of fruit production. Why don't you use all of these facilities? Are you too well satisfied with what you have? Are you willing to keep on taking "pot luck" and share your profits with the bugs?

Although I do not share in either your profits or your losses, let me urge upon you, for the welfare of your industry and your state that you condemn the russet grade of citrus to extinction. What a glorious achievement it would be if the members of the Exchange would be in position to market a no-russet crop. You can do it by giving your groves the intensive, intelligent spraying the situation warrants. You can boost the grades and get the heavy end of the crop into those grades that sell for the most money instead of for the least money, as was the case this past season. Let's have more of that kind.

SUGAR SAVES BORDEAUX MIXTURE

Fruit growers who use bordeaux mixture are well acquainted with the fact that the material that is left in the tank over night, or which for some cause must be left standing for a considerable period, loses its effectiveness. A great deal of waste is occasioned by this instability of bordeaux mixture. But at the Oregon Experiment Station it has been found that a little sugar put in the bordeaux mixture will overcome all of the trouble. Bordeaux mixture thus treated can be held an indefinite length of time and used the same as freshly made bordeaux. This method will save the spray for future use when rain or a break-down prevents the grower from finishing out his tank.

Quantity to Use

In the course of the investigations it was found that the quantity of sugar to use is one-eighth ounce of ordinary granulated sugar for every pound of copper sulphate used. Too much sugar will cause the copper to dissolve. Dissolve the sugar at the rate of one well rounded but not heaping, teaspoonful of sugar in one quart of water, and use this solution at the rate of one-half pint for every pound of bluestone going into the amount of bordeaux required. In other words, a rounded teaspoonful of sugar dissolved in a quart of water is sufficient for 50 gallons of 4-4-50 bordeaux mixture.



Actual photograph of Goodyear Cord Tire in daily operation for John Rogers, Eden Prairie, Minnesota

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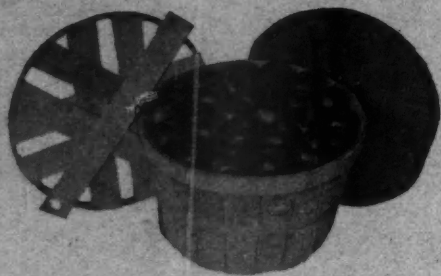
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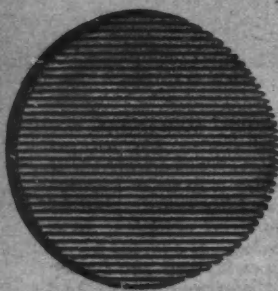
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Fresh Figs Invade East

FRESH figs are one of the greatest fruit delicacies of California and the southern states in which they are grown. But because of the highly perishable nature of the fruit when removed from the tree, it has heretofore been difficult and expensive to ship fresh figs more than a relatively few miles from where they were grown. Fig production in California, however, has increased with leaps and bounds, and necessity demanded an outlet for fresh figs. Producers knew the fruit would sell if an inexpensive and effective way could be found to put it into distant markets. As necessity is the mother of invention, George Sykes of California produced the package that will carry the fruit safely, and as a result the impossible has become possible.

Fresh figs have invaded the big eastern cities this year in carload lots for the first time in history. Through the use of the Sykes method of packing, the first car load shipment of fresh figs ever made was shipped from Fresno, Calif., by express on June 23 for Chicago and New York auction markets.

The car arrived in Chicago on the morning of June 28 in time to go on the auction, and the half intended for that market was quickly disposed of at prices from \$1.50 to \$1.95 a box. At retail, the figs sold at five cents per fruit. The balance of the car went on to New York where the fruit was grabbed at prices as high as \$2.30 a box. The approximate price paid for the nine tons of fruit in the car was close to \$5,000, or about \$550 a ton.

This shipment of fresh figs has a historic significance in addition to its commercial value. The Black Mission fig which constituted this carload, is credited with being the first fig to be planted in California, where it was taken by the Franciscan Friars some two hundred years ago. It is again first, in constituting the initial car load lot to reach the big cities of the east, and to prove that fresh figs can be shipped in large quantities across the continent. The Black Mission fig also scores first in pioneering the eastern trade, and selling at very high prices. It is one thing to sell a well known fruit, but it is an entirely different thing to sell a fruit which the great mass of consumers

never saw before, and to sell it at fabulous prices. But the Black Mission fig, plus Californian energy and inventiveness, has turned the trick.

The figs constituting this shipment were supplied by Phillip Scott of the Lone Star Orchard in Fresno county. The harvesting and packing was done by a crew of experts from the J. C. Forker Fig Gardens under the direction of William C. Bacon. The packed fruit was delivered to the Earl Fruit Company at the State Center warehouse where it was precooled for twelve hours by a system worked out by Jack Harris, manager of the Earl Fruit Company.

In commenting on this shipment, Mr. Harris said: "This is the first time in the history of the fruit business that a practically unknown product has been shipped in carload lots to any distant market with the result that the first arrival brought twice as much money per ton as any other known commodity of that class. For twenty-five years California fig growers have tried to ship fresh figs, and every conceivable package has been used. But the package was not right, and it remained for George Sykes to produce the package which is going to revolutionize the fig industry. Aside from this, the real success in placing figs on eastern markets in the same condition as when they were packed and loaded lies in the care exercised in picking, packing and precooling to a temperature of 33 degrees.

"Men with years of experience in the fruit business in California said it could not be done; that figs could not be packed fast enough by the Sykes method; that the east could not stand a car load at once and that the fruit would not arrive in good condition. But the result tells a different story—it can be done.

"The east wants figs, although they have never had them, and the east will take more at big prices, more than we can raise in California today. The time is not far distant when the cherry market, the plum market and the apricot market will be of secondary consideration as far as figs are concerned. The enthusiastic reception accorded the first carload of California fresh figs certainly should be welcome news to California fig growers."

Rust Mite Causes Tear Stain

ONE of the common blemishes of oranges and grapefruits in Florida, known as tear staining, long has been attributed to the wither tip fungus found growing in dead twigs. But Prof. John R. Winston, plant disease specialist of the U. S. Department of Agriculture, in his studies in the control of citrus scab made the discovery that wither tip tear staining is not due to any fungus. It is produced by rust mites. In his experiments tear staining was almost entirely absent from those plats that received several applications of lime-sulphur solution but was quite prevalent in plats sprayed with bordeaux mixture.

This is a discovery of no small importance to citrus growers whose groves are infested with rust mites. While wither tip is a distinct disease, and causes its share of damage, Professor Winston has proved that tear staining is nothing else than rust mite injury, and therefore easily controlled.

The rust mite, because of his insignificant size, does not get the share of attention in control measures that his damage warrants. While this little pest is listed among the "big six" in Florida, he is really the most expensive offender. A well known grower in the Winter Haven Florida district recently was heard to say that he did

not spray for rust mites, as he could not see them. He didn't think it worth while trying to fight bugs that he couldn't see.

There is too much of that attitude among Florida citrus growers. Possibly it is human nature to look at the matter that way. But fruit that has been damaged by rust mites sells for so much less money, as a rule, than fruit which is unblemished by this pest, that the toll exacted by the rust mites far exceeds the cost of keeping it under perfect control. Professor Winston's discovery regarding the rust mite is worth many thousands of dollars to the citrus growers of Florida, as he has proved that tear staining commonly attributed to the wither tip fungus can be controlled through the use of an insecticide rather than a fungicide.

Just as soon as the rainy season is over, rust mites will again become numerous. A surplus spray will be needed for their control just a few weeks before the picking of early varieties begins. Every grove in which the rust mite is known to exist should have this late application, for it is a waste of time and money to bring a crop of bright fruit through to picking time, and then see its grade lowered two or three notches by a brood of insignificant little rust mites.

The Orchard Home

A Section for Orchard Women and the Children Edited by Mary Lee Adams

Old Power in New Channels

WHEN I DROPPED in to see my friend I found her seated at her table sewing dainty bits of lace into a lovely embroidered gown. With her bright head bent over her work, she looked as typically womanly as the song-girl who is "sitting with her knitting, in the good old-fashioned way." To be sure my friend is a doctor—a surgeon, and her fluffy, frivolous sewing was spread all over her new operating table, fitted with all the very latest adjustments and just then waiting, during a few rare idle minutes, for the next "case."

"Oh" said the doctor, "I'm having such a good time. I found the stupid dressmaker had simply ruined this lovely dress for one of my dearest patients, so I just took it in hand myself, and doesn't it look sweet?" It did. So we chatted of sewing and of how handily it came in for a surgeon who has to put in such skillful stitches at times. "For you see," she continued, "in a case like this, where that tiny end of lace must be fastened firmly to the cloth (only in living tissue) a man surgeon would naturally weave his needle in and out making a cross stitch like this—X, while I use a single buttonhole stitch and there it is—simpler and firmer."

So once again there came to me the refreshing vision of the "Eternal feminine" laughing to scorn the fears of those who anticipate that woman in these modern days is losing all her old delightful attributes without acquiring any of the stronger masculine qualities that might compensate.

The diverse gifts of nature have been distributed more or less equally between men and women. Indeed, some self-constituted authorities are quite fixed in their assumption of what these gifts are and how they are portioned out. To man strength, to woman beauty—to man courage, to woman meekness—to man power, to woman influence—and they are not slow to point out that so far, the men have the best of it. Yet they freely admit that in some ways women are the more fortunate, for they have not husbands, while the best a man can hope for is a wife?

No one pretends that man or woman has a monopoly of the so-called masculine or feminine qualities. Even granting the justice of the above division, there is no reason for women to feel discouraged about their fitness to enter any line of work for which they feel inclination and natural capacity. The very large majority of them will find this work in the home, and it is trite to remark that there is no nobler or more useful field of endeavor.

But suppose your lines do not fall within the walls of home, and you must assume the burden of outside occupation. Don't seek excuses for not doing a good job.

"It's a poor workman who complains of his tools," and one must make the best of it with the tools at hand—the talents with which one is gifted. Remember the biblical parable of the talents, which teaches us that the man who put his five talents to work, gained other five talents. The talent referred to was really a sum of money, but illustrates our purpose as well.

And my surgeon friend—possibly unconsciously—is doing just this thing, making use of the talents she is gifted with to gain yet more, which probably accounts for her large measure of success. Her womanly sympathy is spontaneous and invaluable, and if you were to try to disconcert her with another of the cut and dried axioms, like "to man brains, to woman intuition," she would be far from resenting it, for she says it is just a wonderful help to divine intuitively where the trouble lies and then, upon careful examination, to find that the facts bear out the perception.

An American Sport

THE BLOODY bull fights of Spain and Mexico are sickening to civilized America. Helpless horses are gored, the maddened bull is slain, the matador himself, occasionally killed. It's certainly a horrid, barbarous show to call sport. Most of our states place a ban even on cock-fighting. We seem to have progressed beyond the point where we enjoy witnessing the sufferings of animals. But a Prize Fight! The glorious specimens of manhood mauling each other to a pulp—that's different. That's all American, therefore all right.

For many weeks in advance the newspapers that make it their business to print what the public wants to read, filled their columns with news of the great battle for the World Championship on July 2nd. Glaring headlines four inches high, concerning the fight, blinded many to the insignificant little announcement that war with Germany was at last officially ended. Thus the relative importance of the two events was marked.

Business is bad, school teachers are miserably underpaid, churches lack money, but we're not too poor to spend millions on seeing an Irish boy knock out a French soldier. A clergyman, not a typical one, justifies the affair from his pulpit as encouraging "the manly art of self-defense." Yet handsome Georges himself states that he came here not to box but to fight, and fight he did and fell. As he went down 88,000 men and 2,000 women (outside the ring possible some of them were of the type called ladies) roared as did the Romans of old when a gladiator was overthrown.

Where was the romance in it all? They fought for money. The winner was paid \$300,000. Perhaps the pride of fame sweet-

ened the fortune, but it seems after all, a rather sorry ambition to be acclaimed the biggest of big fighters. The best that can be gotten out of it is the evidence of sympathy with something beside brute force, that was shown in the popular leaning toward the intelligent, debonaire, and endlessly game victim of Jack Dempsey's fists.

We can lay no claim to superior civilization, we are not really civilized at all, so long as we tolerate, nay encourage, such brutal spectacles.

Our National Ingratitude

THE ETHICAL standard of nations is not so high as that of the individuals composing the nation. The latest and one of the most painful examples of this, is our conduct toward disabled soldiers.

Who would have thought when our boys marched away amid the tears, prayers, cheers and vows of eternal gratitude from all who remained at home, that the wounded would live to see themselves neglected and apparently forgotten? Whose fault is it? Every individual expresses indignation at the plight in which so many veterans are left. Endless red tape drags its discouraging length between them and government aid until the poor fellows are ready to give up.

Accommodations for the sick and wounded have been wholly inadequate. Hospitals are not free from charges of neglect. Such charges, if true, are a shame to America. The vocational schools which were designed to fit the partially disabled to earn an honorable and independent living, have failed miserably in many cases to carry out this object.

Where should the blame be placed? Inefficient administration throughout appears to be the answer nearest the truth. At last the public is roused to the wrongness of our treatment of returned soldiers. This should be the first step toward bettering conditions. A childish verse of atrocious rhyme and frankly shady morals, proclaims that "A sin that is hidden, is half forgiven." Rather better is the idea that "A fault that is owned, is half atoned."

We now own that we have treated the boys shabbily, but owning it is still far from atoning. Let our future actions prove that our regret goes deeper than words.

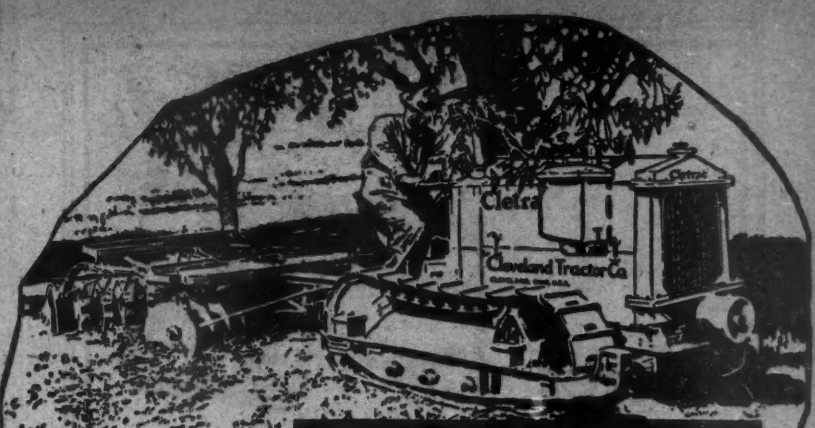
The Singing Heart

My heart was a stone
Dumb, alone and dumb,
Voiceless through silent years.
Then came my mate.
I spoke. My heart sang.
My heart is no more a stone.
My heart is a bird.
It found voice.
With my mate it found voice.
My heart sings like a bird.

—Translation.

... of Sighs, and William was
... his.
... two o'clock that afternoon they
... the steamboat for the Lido. Will-
... was deeply puzzled, for there was
... sign of recent tears. She was gay,
... had yet to learn that woman with
... hurt can laugh. And he had
... out with the idea of making her
... her troubles! But as they sat
... in the pavilion for tea and cakes,
... he heard her gasp painfully.
... Next morning Cook sent out the
... If the missing letter was not
... within thirty days a new letter
... would be issued and forwarded either
... Cairo or Colombo. All William stood
... was time. To make sure that
... would not lack for immediate funds
... enabled Bureau to send five hundred
... Cairo.
... "And so, sister, you've got to carry
... other Bill's money. I haven't told
... anybody but you."
... "But I might lose it."
... "I'll take the risk." He did not con-
... to her the suspicions he held in re-
... to the Italian vendetta. Worry-
... her would not better his situation.
... the way, where's Camden?"
... "He left for Venice late last night."
... "Uh-huh. What's your idea of him?"
... "Moody, but very interesting." She
... rather non-committal.
... He set a smiling face for his school-
... teacher, and she suspected nothing.
... of them took note of a new
... Their fellow-tourists were be-
... coming to smile when they saw these
... together, which was daily and
... everywhere. Romance! Humanity
... indulgently upon the young
... male and female when they walk to-
... gether, upon love or the suggestion of
... Heaven knows why they smile; the
... thing is serious enough.
... They came into Venice at sunset.
... once William was bereft of speech.
... brooding silence of this magic city
... the sea laid hold of him.
... "Beautiful, beautiful!" murmured the
... at his side. "And I have lived to
... see it!"
... Several times on the way to the hotel
... he grasped his arm to call his atten-
... (as if that were necessary) to
... enchanting marble, the towers
... in the flood of sunset, the base of
... dark and gloomy like Alpine ice.
... had time she touched him he trem-
... Sometimes he found it very hard
... to be so close to her.
... "Oh, we mustn't stay indoors here;
... must be out in the sunshine every-
... where. I'm going to love it. I don't
... want to go any farther. I want to stay
... on all the rest of my life."
... They were keen to ride around the
... canal that night; and William engaged
... gondoller immediately after dinner.
... for they had listened to the barge
... songs (and the inevitable torador
... song), they let the man at the sweep
... whether he listed. He slid into the
... canals and wound in and out among
... the destroyers, the liners, sloops,
... and lighters. They were glid-
... ing under the stern of a handsome sea-
... going yacht, white as frost in this
... comparable moonlight.
... William slowly spelled out the name.
... "E-l-s-a; Elsa, New York. Well,
... she's a boat all the way from the old
... world."
... A strange thing happened. The girl
... a little cry and huddled down
... to the black cushions of the gon-
... dola.
... "WHAT'S the matter?" asked William,
... bending toward her in alarm.
... "Nothing," she
... answered. "I feel a little dizzy.
... Would you mind if I returned to the
... hotel? You see, we were half a day on
... that crowded train, and perhaps I'm
... unwell."
... "Sure we'll go back."
... He looked at the vanishing stern of
... the yacht, then down at the girl again.
... Day entered a circle of light, and he
... saw that her hands were clasped con-
... ceivably. It was, he surmised, some-
... thing about the name Elsa. And who
... was Elsa? A sister?
... "It was plainly apparent that the
... name of the yacht had disturbed Ruth,
... and it was equally clear that she had
... a life about it.
... "You mustn't come in on my ac-
... count," she protested, as the gondola
... moved up to the hotel's marble steps,
... with the rising tide.
... "You're better?" He had to ask her
... that.
... "Oh yes. Just a bit tired and fussy,
... perhaps. I'll be all right to-morrow.
... We know we are all going out to Mur-
... and Burano to see them make
... hats. So don't get lost."
... "I'll take care of William," he
... assured. "There won't be anybody
... coming on my back in Venice, unless
... they can walk on water."
... William lighted a cigar and slumped
... down against the cushions.
... "Where, Signore?" asked the gon-
... doller, touching his hat.
... "Anywhere for an hour; the Grand
... Canal and back."
... William did not care where the gon-
... doller carried him. He wanted leisure
... to think, to reconstruct his castle of
... romance, to discover an excuse which
... would prove impregnable, like Gibraltar.
... As there was no wind to speak of,
... the house of cards went up rapidly.
... The cigar was pleasant, the night
... glorious, full of ineffable moon-

shine which fired the heavy dew on
church domes and marble porticoes,
making the house of cards the only
real, substantial thing of the moment.
Whimsically he pictured himself in
court, arguing the case for the defend-
ant. He rested his case. Slowly the
prosecuting attorney rose. William
confessed that his opponent's thin,
wintry smile was rather disquieting.
What was he going to say?
"Your Honor, I have in the first place
to acquaint you with the fact that
there is no such person as Elsa War-
ren and never was."
William stirred uneasily.
"In the second place, in order to de-
molish my opponent's plausible defense,
I have only to place before you this
torn photograph, this little chamois
bag, and to submit this brief prayer,
lately uttered by the defendant herself
on board the ship Ajax."
William sat up stiffly. He heard
these words as surely as he heard the
lap-lap of the water against the sides
of the gondola.
"I ask the strict attention of the
jury, your honor," went on the prose-
cuting attorney, "while I recite this
prayer: 'Dear God, make me strong.
Take out of my heart the evil longings.
Give me strength always to be good.
Let me not covet that which is not
mine. Clean my heart and put tempta-
tion behind me. Amen!'"
"Aw, hell!" said William, aloud,
crumpling back in his seat.
"St. Signore," replied the gondoller,
believing he had received an order to
return to the hotel.
William did not hear him. He was
busy fighting his way out of court, out
of the house of cards that was tum-
bling about his ears, out into realities
again.
"Signore!"
William looked up. They had re-
turned to the marble steps of the hotel.
The porter was putting out the car-
peted landing plant.
"No, no; I don't want to go in yet,"
said William. "Say, porter, tell the
man to row me over to that white
yacht there, the one next to the tur-
pento-boat. Ye-ah. Tell him to row
around it slow and close."
"Yes, sir." The porter volleyed a few
phrases at the gondoller, who returned
them with interest, gesticulating
wildly.
The yacht Elsa was dark except for
the ports of the dining-saloon. In
Venetian waters the voice carries re-
markably far. As the gondola was
edging along under these lighted ports,
William heard laughter—men's laugh-
ter. He raised his hand quickly to sig-
nify that he wished to stop. He was
not overscrupulous to-night.
"Yes. And so I sent it back to New
York."
"But why didn't you keep it?"
"What good would that have done?
Besides, the jackal isn't so much a thief
as he is a taker of leaveings. Bah!"
There followed the light tinkle of
glass. William strained his ears. The
voice of the man who called himself a
jackal was tantalizingly familiar and
at the same time it persistently eluded
identification.
"I tell you the whole thing smacks of
cheap melodrama," declared the jackal.
"I wish you'd drop that lecturing
tone," replied the other voice, which
was not familiar at all.
"The jackal apologizes."
"Jackal?"
"Well, what am I if not a jackal?
Why put frills on it and call me your
man of affairs? Why try to get around
it with verbal soft-soap? I'm a sneak.
It doesn't matter that once upon a
time I lived on the decent side of the
street. The fact is incontrovertible
that I'm your jackal. I've done this
kind of work for you before; so what
the devil? True, I never bargained
for a chase like this. I've done the
work you've hired me to do, and here's
my little bill for the same, Orestes!"
"Orestes?" murmured William.
"Sounds like dago or Spanish."
"And the bill shall be paid on the
nail in the morning."
"I never doubted that for a moment.
There's one thing about us two: when
I promise to do a dirty bit of work for
you, I do it; and when you promise to
pay, you pay."
Below, William scowled. This con-
versation was all more or less Greek to
him. One voice was familiar, but for
the life of him he could not place it.
It might be that Ruth had told him the
truth, that she was tired and fussy be-
cause of the long journey on the train.
"Ahoy, there! What do you
mean by sneaking up alongside this
way?"
"Where do you get that noise?"
snarled back William, furious at hav-
ing been interrupted. A few more
words between the two men inside the
yacht might have decided the matter
one way or the other definitely. "This
is free water, I guess."
"Sure it is; and the freer the better
for you. We don't like snoops sticking
their noses into our paint. Get a move
on or I'll drop a bucket of slops on you,
my handsome rubberneck."
"Try it, you big boob! I wouldn't
mind a few minutes' close harmony
with you!"
"Hotel," growled William, sitting
down. The man above had two distinct
advantages—height and right.
(TO BE CONTINUED)



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Health of Children Guarded

GOOD HEALTH should be established in childhood. That is the right time for laying the foundations of sturdiness as shall tend to immunity from avoidable disease, and, one might almost say, which shall insure a happy future. Those who are strong and well are prone to happiness. Grievances may overtake them, sorrow is the common lot of all, but it is better borne by the individual who is well. Trouble comes to such more like the passing of a cloud shadow on a sunny day than like the settled gloom of ill health.

Child Welfare Work and the health investigations at the time of the war, showed that we had been taking too much for granted the physical well-being of our children. Each year marks progress in what is being done for children. The various states are waking up to the splendid investment that is made when the health of its children is cared for.

A single case in point is the big crusade that is being made to preserve the little ones from blindness. It is required in some states that the person who is in attendance upon a newborn infant, shall immediately after its birth, drop into its eyes a prophylactic solution approved by the state board of health. The performance of this duty must be reported to the proper authorities. Further, it is required that if in two weeks after birth the infant's eyes show unsatisfactory conditions, the authorities must be notified in writing and they must take such immediate measures as shall prevent avoidable blindness.

Whose heart has not been stirred by the pitiful institutions for the blind? Little sightless children, men and women incapacitated for normal work and living, fill the schools and asylums for the blind. Now it is known that such simple precautions as those mentioned above would all but eliminate blindness. It is worth while to spend something in thought, effort money to lift this curse. Coming right down to cold, hard consideration of money, what an immense saving is involved in proportion to the small outlay necessary to pass measures and to make them effective.

The agencies interested in the health of school children, grow constantly more active and efficient. Probably each state has reached some degree of helpfulness in this respect, but the states differ widely in the amount of care supplied, and some are still sadly lacking in provisions for the benefit of the children.

In such states, mothers, teachers, welfare workers, in fact all thinking people, should work for improvement in the state laws. Mothers first, for if mothers do not actively interest themselves in promoting child welfare, who may be expected to do so? Teachers next—because to intelligent teachers it is daily evident that many of the school children need other care than the home can or does afford.

It would be a good lesson for mothers and teachers to learn what each state is doing for its children, to compare this with what their own state is doing, and then to make up their minds that they will earnestly make use of their age-old gift of influence and of their newer and more direct power of the ballot, to mold public opinion and legislation in such manner as shall insure the passage of liberal and far-seeing measures.

Probably conditions in no state are so good but that they might be better. Missouri for instance, claims the distinction of having done more for the health of its children in the past two years than in any previous ten years. The 1921 legislature made an appropriation sufficient for at least two child welfare workers, and for printing and postage, so that henceforth Missouri will have a State Department of Child Hygiene, and will

have competent persons to direct and correlate child welfare.

The Physical Education Bill was passed for physical education in various phases, such as health habits, playground activities, competitive school athletics, personal and school hygiene, periodical physical tests and examination and the recording and reporting of the same. Proper superintendence of these to be given by supervisors, school nurses and so forth. What is very important, is the introduction of courses in physical education into Teachers' Training colleges.

More than this does Missouri do for her children, yet she is modest withal, for it is recorded with a blush that while "\$12,000 was appropriated for the Child Hygiene Division for work every day during the entire year, \$125,000 was appropriated for a Hog Pavilion which is used six days out of the year." It is extremely likely that the women of Missouri will point out to the next legislature this discrepancy between the State's treatment of its hogs and its children.

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ARSENATE LOWERS CITRUS ACIDITY

While arsenate of lead is highly satisfactory for the control of chewing insects, spray materials in which it occurs cannot be used on citrus fruits without danger of rendering the fruit insipid through a marked decrease in the acid content. Some very interesting investigations along this line have been concluded by George P. Gray, chief chemist, California state department of agriculture and H. J. Ryan, Los Angeles county horticultural commissioner. In these investigations it was found that when navel or Valencia oranges were sprayed with certain proprietary spray materials containing arsenate of lead, or with lime-sulphur or bordeaux mixture to which arsenate of lead had been added, the acid of the fruit was lowered. "This reduction amounts to roughly 50 per cent of the normal acidity on fully ripe oranges, but in many cases much more, especially in the case of Valencias hanging upon the tree beyond the usual time of harvest.

"While it may be a matter of individual taste whether the flavor of these abnormal oranges is impaired, provided the acidity is not reduced to lower than .4 or .5 of one per cent, there is no room for doubt when the acidity is reduced much lower than this. The fruit is flat and insipid, and if the acid is reduced to .2 per cent becomes even nauseating."

Just how this is brought about is unknown at the present time, and the discovery of the reason for this peculiar behavior of arsenical sprays is believed to be difficult. However "the writers are inclined to think that the action of the sprays is probably systemic, affecting the whole tree rather than local. If reduced acidity were due to local absorption or other effect of the spray through the rind of the fruit, one would expect a few oranges in the lot to be of normal acidity. Such was not the case, however. Practically every orange tested in the sprayed orchards (excepting early navels) showed the effect of the spray but some more than others."

Until this peculiar behavior of arsenical sprays has been investigated more thoroughly, it is safe to conclude from the result that spray materials containing arsenic in any form should not be used on citrus trees. Fortunately citrus fruits are not troubled with many chewing insects, as are deciduous fruits, and such as do infest citrus are of comparatively small importance.

TRY THIS WHEN YOU SPRAY

When spraying with lime-sulphur, the operator cannot always tell just how thoroughly the surface is being sprayed, because of the difficulty of seeing a thin film of the whitish residue left when the water evaporates. But this may be overcome through the use of a simple and inexpensive indicator that can be added to the lime-sulphur spray. This indicator is just common copperas (iron sulphate). According to the Oregon Experiment Station it should be used as follows:

"Take half as many pounds of iron sulphate (copperas) as you use gallons of concentrated lime-sulphur solution in the spray tank. Dissolve the crystals in water and add this solution to the tank of dilute spray. As a result the tank full of spray will turn black in color, due to the formation of black iron sulphide, which some days after application turns into red iron rust.

"The spray loses practically none of its fungicidal effect as a result, nor is there any undesirable effect, but the spray operator can now tell instantly how well he is covering the trees, because of the black color of the material. The tops of the trees or a projecting branch cannot now be missed without detection and the result is an appreciably larger percentage of perfect fruit in the harvest at an insignificant cost and little trouble."

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OF THE

North American Fruit Exchange

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THE TIME HAS NOW ARRIVED when, with the growth of co-operative growers' organizations throughout the country, the North American Fruit Exchange is in a position to serve such organizations on a **MUTUAL BASIS** as follows:

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2. The profits of the Exchange will be limited to 10% on its properly issued capital stock.

3. All net earnings above 10% will be divided 50% to the Exchange and 50% to

all growers' associations which it serves, as a reduction of their service fee charges.

The amount accruing to growers' associations under this provision will be distributed annually, each association receiving its proportion based on the ratio which the gross service fees it pays into the Exchange bears to the total service fees received by the Exchange.

Annual statements will be rendered to all participating organizations showing the earnings and the division of profits and service fee reduction. Such statements will be rendered by a firm of Certified Public Accountants of National Reputation.

THE EXCHANGE GUARANTEES THAT

1. Neither the Exchange nor any of those engaged in its management speculates in any way in the fruit or vegetable industry, nor has any interest direct or indirect in buying commercially on their own account or through commission or jobbing houses or otherwise any of the products which it or any of them sell.

2. It has no interest in any subsidiaries engaged in speculation in fruits and vegetables.

Specific provisions covering the above will be included in service contracts made after August 1, 1921

This Marks a New Era in the Fruit and Vegetable Industry

It makes the North American Fruit Exchange the **NATIONAL CENTRAL SALES AGENCY** of growers' organizations in which the growers have a direct and substantial interest and enables them to materially decrease their selling costs by co-operating in enlarging the tonnage handled by the Exchange. It is obvious that the greater the number of cars

handled by the Exchange the lower the cost per car will be and hence the greater will be the returns to growers' organizations as a reduction in service fees at the end of each year.

It will also have a far-reaching effect in stabilizing prices by effecting better distribution on a large scale and prevent losses resulting from glutted markets.

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ARTHUR R. RULE, V.-Pres. and Gen'l Mgr.
GEORGE A. CULLEN, Vice-President
C. E. BASSETT, Director Field Org.

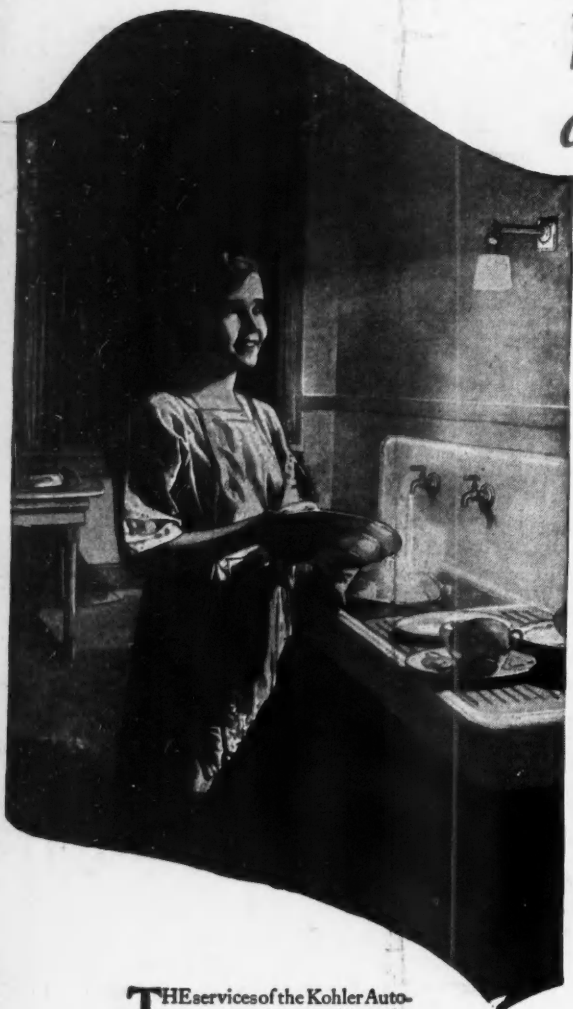


JOHN F. DEEGAN, Gen'l Sales Manager
A. E. WERMOUTH, Treasurer
W. B. RULE, Secretary
F. X. BAUR, Transportation Manager
W. V. DEGEN, Freight Claim Agent

EXECUTIVE OFFICES

90 West Street
New York City

Why is life on one farm attractive and on the other, simply drudgery?



You hear a great deal these days about young people leaving the farm for the city. What is it that is driving them away? What is the pulling power that the cities exert?

And why is it, that perhaps on a farm adjacent to the one that has been robbed of its youth, there are young people living, happily and contented, enjoying all the real, fundamental pleasures of life?

This is a real problem which touches every home in the land. For the farmer feeds and clothes humanity. And what affects him, affects, in a very real way, the world.

What a Congressional Investigation showed

Look at the problems squarely. A Congressional investigation showed that the percentage of young people who left the farm that was well-equipped with household conveniences, cheerful light, and modern farm equipment, was much smaller than of those who left the farm where these comforts and utilities were not available.

How about your farm? How about your children—and your wife? Have you done your part to make farm life attractive, or is life on your farm

simply drudgery—doing things the old-fashioned, laborious, slow way? There is no excuse today for that kind of a farm.

For the Kohler Automatic Power and Light makes possible, anywhere, all the comforts and conveniences that electricity brings to city homes: cheerful electric light, convenient, energy-saving electric household appliances, running water systems, and power appliances that allow farm chores to be done more quickly and more easily.

Only the KOHLER Automatic gives you these desirable features

No Storage Batteries to buy and replace. Only battery is a small automobile type for starting engine.

Automatic Start and Stop—A turn of any switch on the circuit starts or stops the engine.

Standard 110 Volt Current—Permits use of standard appliances (110 volt), which cost least.

1500 Watt Capacity—Ample flow of current for both power and light, without danger from overload.

Four-Cylinder Engine, remarkably free from vibration, means smooth operation and long life.

Operating Costs Kept Low by automatic governor which tapers fuel consumption to current used.

Manufactured Complete in Our Own Factory, so that the well-known Kohler standards shall be maintained in every part.

Backed by Forty-eight Years of experience in the making of quality products.

KOHLER OF KOHLER

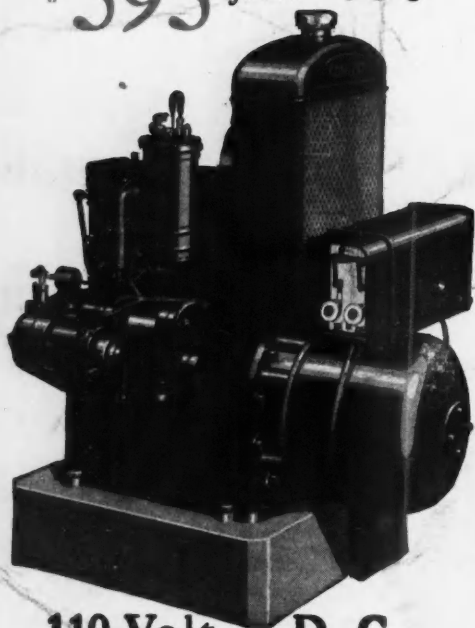
Kohler Co., Founded 1873, Kohler, Wis., Shipping Point, Sheboygan, Wis.

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